

REMARKS

This application has been carefully reviewed in light of the Office Action dated April 18, 2008. Claims 1, 4, 7 to 9, 26 and 27 are pending in the application, of which Claims 1, 8 and 9 are in independent form. Reconsideration and further examination are respectfully requested.

Claims 1, 4, 7 to 9, 26 and 27 were rejected under 35 U.S.C. § 103(a) over U.S. Patent No. 5,566,252 (Miyaza) in view of U.S. Patent No. 5,586,242 (McQueen), and in further view of U.S. Patent No. 6,088,478 (Davies). Reconsideration and withdrawal of this rejection are respectfully requested.

Turning now to the claims, Claim 1 is directed to an image processing apparatus. The apparatus comprises a reading unit constructed to read an image in an original, a character recognizing unit constructed to recognize a character in the image read by said reading unit and to output a character code as a result of recognition, a storing unit constructed to store a character font, a readout unit constructed to read the character font from said storing unit based on the character code output by said character recognizing unit, a detecting unit constructed to detect first character size concerning the character in the image read by said reading unit, a setting unit constructed to set a magnification ratio based on an instruction by an operator, a determining unit constructed to determine second character size based on the first character size and the magnification ratio, a selecting unit constructed to select a type of the character font stored in said storing unit based on an instruction by the operator and a generating unit constructed to generate a reproduced image, which includes characters having the second character size, based on the character font, the type of which is selected by said selecting unit, wherein said generating unit

generates the reproduced image by selectively allocating one of plural kinds of width of character gap between each of adjacent characters, with a sum of plural character widths, each of said character widths corresponding to a combination of a width of the second character size and one of the plural kinds of width of character gap, being fit to a width of the image read by said reading unit multiplied by the magnification ratio.

Amended independent Claims 8 and 9 are directed to a method and a computer-readable medium, respectively, substantially in accordance with the apparatus of Claim 1.

The above-described features of the present invention are used to solve the following problem that is illustrated in paragraphs [0029] to [0030] of the present application as published. As described, the width of a reproduced image may be obtained by multiplying the character width for one character (each of the character widths corresponding to a combination of width of the second character size and one of the plural widths of character gap) by the number of characters included in the reproduced image. If the width of the reproduced image (e.g., 3306.8 pixels) obtained by magnifying the width of the image read by the reading unit (e.g., 4724 pixels) by a magnification ratio (e.g., 0.7) is divided by the number of characters of a certain character (e.g., 40 characters) to obtain the character width for each character, then the obtained character width for one character does not necessarily become an integer (e.g., 82.67 pixels). Thus, it is necessary to set the character width to an integer for the purpose of recording.

However, if all the character widths are set to certain integers (e.g., 82 pixels or 83 pixels), the actual character width differs from the magnification ratio, whereby the reproduced image cannot be faithfully generated in regard to the read image.

For example, if the character width is set to 82 pixels, the width of the reproduced image becomes smaller than the desired width (the width of the image read by the reading unit multiplied by the magnification ratio). On the other hand, if the character width is set to 83 pixels, the width of the reproduced image becomes larger than the desired width (the width of the image read by the reading unit multiplied by the magnification ratio).

Therefore, in an apparatus in accordance with the present invention, the reproduced image is generated by selectively allocating one of plural kinds of width of character gap between each of adjacent characters, with a sum of plural character widths, each of said character widths corresponding to a combination of a width of the second character size and one of the plural kinds of width of character gap, being fit to a width of the image read by said reading unit multiplied by the magnification ratio. This ensures that the resultant image is fit to the entire space available but without overrun.

Applicant respectfully submits that the cited references, namely Miyaza and McQueen, considered either alone or in combination, fail to disclose or suggest all of the features of the invention as recited in Claims 1, 8 and 9. In particular, the cited references, either alone or in combination, fail to disclose or suggest at least the features of generating a reproduced image by selectively allocating one of plural kinds of width of character gap between each of adjacent characters, with a sum of plural character widths, each of said character widths corresponding to a combination of a width of the second character size and one of the plural kinds of width of character gap, being fit to a width of the image read by said reading unit multiplied by the magnification ratio.

Miyaza discloses a system wherein the readability of a reduced image is enhanced by manipulating individual lines that compose a character. Specifically, Miyaza

states "as illustrated in FIG. 93(c), when the line width and density of the magnified character 62 are out of the predetermined range, if a copy is produced at the magnification rate specified in step 32, the magnified character 62 becomes unreadable. Therefore, the line width of the magnified character 62 is corrected to be in the predetermined range by making a thinner portion thicker and a thicker portion thinner so as to obtain a corrected character 64 (step 43). Then, the above-mentioned copying operation is performed (steps 41 and 42) and the magnification mode comes to an end." (See Miyaza, Column 71, Line 25 to Column 73, Line 38).

The Office Action states that Miyaza in view of McQueen "does not explicitly teach wherein said generating unit generates the reproduced image by selectively allocating a plurality of character gap widths between adjacent characters, in accordance with a width of the characters having the second character size" (page 5, lines 7 to 10 in the Office Action). However, the Office Action states that "Davies teaches a method of distinguishing two character sizes, i.e., bold and non-bold characters, and allocating a plurality of character gap widths between adjacent characters" (page 5, lines 10 to 12 in the Office Action). Thus, the Office Action concludes that the feature of the present invention as recited in independent Claims 1, 8 and 9 is obvious from a combination of Davies, Miyaza and McQueen (page 5, line 3 from the bottom to page 6, line 8 in the Office Action).

However, Applicant submits that the generating unit or step of the present invention as recited in independent Claims 1, 8 and 9 is not taught by Davies. That is, the generating unit (step) of the present invention as recited in amended independent Claims 1, 8 and 9 is characterized by generating a reproduced image by selectively allocating one of

plural kinds of width of character gap between each of adjacent characters, with a sum of plural character widths, each of the character widths corresponding to a combination of width of the second character size and one of plural width of character gap, being fit to a width of the image read by the reading unit multiplied by a magnification ratio. As featured in the claims, "character widths" correspond to a combination of the width of the second character size and one of plural kinds of width of character gaps. That is, a character width is a width of the second character size added to one of the plural kinds of character widths. On the other hand, Davies distinguishes bold and non-bold characters, and, at that time, determines mass, run area, total runs and stroke width and categorizes a symbol into an equivalent class or creates a new equivalent class on the basis of histograms. However, Davies does not at all disclose or suggest the above feature of the present invention.

In light of the deficiencies of Miyaza, McQueen and Davies as discussed above, Applicant submits that amended independent Claims 1, 8 and 9 are now in condition for allowance and respectfully requests same.

The other pending claims in this application are each dependent from the independent claims discussed above and are therefore believed allowable for at least the same reasons. Because each dependent claim is also deemed to define an additional aspect of the invention, however, the individual consideration of each on its own merits is respectfully requested.

In view of the foregoing amendments and remarks, the entire application is believed to be in condition for allowance, and such action is respectfully requested at the Examiner's earliest convenience.

CONCLUSION

No claim fees are believed due; however, should it be determined that additional claim fees are required, the Director is hereby authorized to charge such fees to Deposit Account 50-3939.

Applicant's undersigned attorney may be reached in our Costa Mesa, California office at (714) 540-8700. All correspondence should continue to be directed to our below-listed address.

Respectfully submitted,

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